Amendments to the Specification

Please add the following new text on line 22 of page 10 after the first sentence of the second full paragraph ending with the words "and the reference wick 30."

The sensor has self-condensing properties due to its small mass and capability of rapidly changing temperature. Also, the antimony sensor and the reference element are present on a single external surface on the distal end of the device which allows for a droplet of condensed liquid to create an electrical bridge, as shown in Figures 2 and 3. The pH of the droplets can then be measured. As an example (Figure 6), when the present invention self-condensing sensor is used in conjunction with a system to measure a patient's breath, the terminal portion of the device can rapidly change temperature in response to the inhalation and exhalation cycles of the patient. During inhalation, the external surface forms cools below the dew point of the ambient air. When moist exhaled breath comes in contact with the external surface, passive condensing of droplets forms on the external surface without the assistance of any peripheral cooling means.

Please replace the last paragraph on page 9 with the following amended paragraph.

A reference wick 20 is located between the inside surface of the outer tubular member 15 and the outer surface of the inner tubular member 17. In one embodiment (see Figure 2), the inner tubular member 17 is coaxially offset with the outer tubular member 15. The reference wick 20 partially surrounds the inner tubular member 17 where the area of the offset coaxial design is large enough to contain the fabric or mesh configuration of the reference wick 20. As discussed in more detail

below, reference wick 20 has a mesh or fibrous configuration which functions to entrain or retain an ion conducting fluid, gel or polymer 19. As the mesh or fibrous configuration is compacted, less ion conduction fluid, gel or polymer 19 can be entrained or retained. Reference wick 20 is physically separated from the antimony sensor 24 by the wall of inner tubular member 17. It is importance to the present invention that the reference wick 20 does not engage or contact the antimony sensor 24 at any point. The reference wick 20 can be fabricated from a variety of polymeric based materials. Examples of such materials are polysaccharides, (cotton, regenerated cellulose) polyester, polyethylene, polypropylene, polyvinyl chloride (PVC), polystyrene, ABS, nylon, delrin, polyethylene terephthalate (PET), polytetrafluoroethylene (PTFE), collagen, Hytrel (thermoplastic polyester elastomer), or any material or combination of materials which exhibit a weave, felt or mesh design that facilitates wicking or ion conduction. One example of a preferable material for the reference wick 20 is a polyester fabric mesh. The reference wick 20 functions as a plurality of capillary tubes which transport electrical ions between the antimony sensor face 22 and reference element 30.

Please replace the last paragraph on page 10 with the following amended paragraph.

The reference wick 20 is impregnated with an ion conduction fluid, gel or polymer 19. Typical conduction media include those that contain sodium chloride or potassium chloride and water. One example that can be used with the sensor is a polysaccharide based gel that is incorporated with a 2-10 percent, with a preferred range of 3-5 percent, solution of sodium chloride and water. Other materials that can function as the reference wick 20 with an ion conduction fluid, gel or polymer 19 include ion carrying gels, hydrogels, and excipients.

These gels, hydrogels, and excipients aid in reducing the diffusion of contaminants into the reference element 30. While it is not shown, the Applicants anticipate that the orientation of the inventions elements can be alternated. For example, the antimony sensor can be located between the inside surface of the outer tubular member and the outside surface of the inner tubular member while the reference element and the wick material can be enclosed within the inner tubular member.